

Sequence Listing

SEQ ID NO. 1 - The full-length nucleotide sequence of the spike (S) gene of SARS CoV, clone 12 of 2774 strain  
RNA linear

ORGANISM: SARS coronavirus 2774 strain

Viruses; ssRNA positive-strand viruses, no DNA stage;  
Nidovirales; Coronaviridae; Coronavirus.

1 atgtttatattt tccttatttt tcttactctc actagtggta gtgacccctga ccgggtgcacc  
acttttgatg 70 71 . atgttcaagc tcctaattac actcaacata cttcatctat gaggggggtt  
tactatcctg atgaaattt 140 141 tagatcagac actctttatt taactcagga tttatctctt  
ccatTTTattt ctaatgttac agggtttcat 210 221 actattaatc atacgtttgg caaccctgtc  
atacctttta aggatggat ttatTTTgtc gccacagaga 280 281 aatcaaATgt tgTCCGTGgt  
tgggtttttg gttctaccat gaacaacaag tcacagtcgg tgattattat 350 351 taacaattct  
actaatgttg ttatacgagc atgtaacttt gaattgtgtg acaacccttt ctTtgcgtt 420 421  
tctaaACCCA tgggtacaca gacacatact atgatattcg ataATgcatt taattgcact ttccgagtaca  
490 491 tatctgatgc ctTTTcgctt gatgtttcag aaaagtccagg taatTTaaa cacttacgag  
agTTTgtgtt 560 561 taaaaataaa gatgggtttc tctatgttta taagggttat caacctata  
atgttagttcg tgatctacct 630 631 tctggTTTta acactttgaa acctatttt aagtgcctc  
ttggTattaa cattacaaat tttagagcca 700 701 ttcttacagc ctTTTcacct gctcaagaca  
tttggggcac gtcagctgca gccttTTTg ttggcgattt 770 771 aaagccaaACT acatttatgc  
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atttcagggt tgTTccctca ggagatgttg tgagattccc taatattaca aacttgtgtc ctTTTggaga  
980  
981 ggTTTTaaat gctactaaat tcccttctgt ctatgcatttgg gagagaaaaaa aaatttctaa  
ttgtgttgct 1050 1051 gattactctg tgctctacaa ctcaacagtt ttttcaacctt ttaagtgtcta  
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tgttagtcaag ggagatgtatg taagacaaat 1190 1191 agcGCCAGGA caaaACTggtg ttattgtgt  
ttataattat aaattgcacatg atgatttcat gggTTgtgc 1260 1261 ctTgcTTggA atactaggaa  
cattgatgct acttcaactg gtaattataa ttataaaat aggtatctta 1330 1331 gacatggcaa  
gcttagggccc tttgagagag acatatctaa tgccttgc tccctgtatg gcaaacctt 1400 1401  
cacccccacct gctttaattt gttattggcc attaaatgtat tatggTTTT acaccactac tggcattggc  
1470 1471 taccaacctt acagagttgt agtactttct tttgaacttt taaatgcacc ggccacgggt  
tgtggaccaa 1540 1541 aattatccac tgaccttatt aagaaccagt gtgtcaattt taatTTaaat  
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catgcagatc aactcacacc agcttggcgc atataattcta ctggaaacaa ttttccag 1890 1891  
actcaagcag gctgtcttatt aggagctgag catgtcgaca cttcttatga gtgcacatt cctattggag  
1960 1961 ctggcatttgc tgcTTttc catacagttt ctTTTattacg tagtactagc caaaatcta  
ttgtggctta 2030 2031 tactatgtct ttaggtgtc atagttcaat tgcttactct aataacacca  
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ctaaaacctc cgtagattgt aataatgtaca 2170 2171 tctgcccaga ttctactgaa ttttccat  
tgcttctcca atatggtagc ttttgcacac aactaaatcg 2240 2241 tgcactctca ggtattgtc  
ctgaacagga tcgcaacaca cgtgaagtgt tcgctcaagt taaacaaatg 2310 2311 tacaAAACCC

caactttgaa atattttgtt ggtttaatt tttcacaaat attacctgac cctctaaagc 2380 2381  
 caactaagag gtctttatt gaggacttgc tcttataaa ggtgacactc gctgatgctg gcttcatgaa  
 2450 2451 gcaatatggc gaatgcctag gtgatattaa tgcttagagat ctcatttgta cgccagaagtt  
 caatggactt 2520 2521 acagtgttgc cacctctgtc cactgatgat atgattgctg cctacactgc  
 tgctctagtt agtggactg 2590 2591 ccactgtgg atggacattt ggtgctggcg ctgctttca  
 aataccctt gctatgcaaa tggcatatag 2660  
 2661 gttcaatggc attggagttt cccaaaatgt tctcttatgag aacccaaaaac aaatcgccaa  
 ccaatttaac 2730 2731 aaggcgatta gtcaaattca agaatcactt acaacaacat caactgcatt  
 gggcaagctg caagacgtt 2800 2801 ttaaccagaa tgctcaagca ttaaacacac ttgttaaaca  
 acttagctt aattttggta caatttcaag 2870 2871 tggctaaat gatatcctt cgccacttga  
 taaagtcgag gcggaggtagt aaattgacag gttaattaca 2940 2941 ggcagacttc aaagccttca  
 aacctatgta acacaacaac taatcagggc tgctgaaatc agggcttctg 3010 3011 ctaatcttgc  
 tgctactaaa atgtctgagt gtgttcttgg acaatcaaaa agagttgact ttttgaaaa 3080 3081  
 gggctaccac cttatgtcct tcccacaagc agccccgcat ggtgttgc tccatcatgt cacgtatgc  
 3150 3151 ccatcccagg agaggaacctt caccacagcg ccagcaattt gtcatgaagg caaagcatac  
 ttcctctgt 3220 3221 aagggttttt tggtttaat ggcacttctt ggttattac acagaggaac  
 ttctttctc cacaataat 3290 3291 tactacagac aatacatttgc tctcaggaaa ttgtgatgtc  
 gttattggca tcattaacaa cacagtttat 3360 3361 gatcctctgc aacctgagct tgactcattc  
 aaagaagagc tggacaagta cttcaaaaat catacatcac 3430 3431 cagatgttgc tcttggcgac  
 atttcaggca ttaacgcttc tgctgtcaac attcaaaaag aaattgaccg 3500 3501 cctcaatgag  
 gtcgctaaaa atttaaatgta atcactcatt gacccatcaag aattggaaa atatgagcaa 3570 3571  
 tatattaaat ggccttggta tggttggctc ggcttcattt ctggactaat tgccatcgatc atggttacaa  
 3640 3641 tcttgctttt ttgcatgact agttgttgc gttgcctcaa gggtgcattgc tcttgggtt  
 ctgtgctgaa 3710 3711 gtttggatgag gatgactctg agccagttct caagggtgtc aaattacatt  
 acaca 3765

SEQ ID NO. 2 - The full-length amino acid sequence of the spike (S)  
 gene of SARS CoV, clone 12 of 2774 strain  
 Amino acid

1 MFIFLLFLTL TSGSDLDRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL  
 PFYSNVTGFH 70  
 71 TINHTFGNPV IPFKDGIVFA ATEKSNVVRG WVFGSTMNNK SQSVIIINNS TNVVIRACNF  
 ELCDNPFFAV 140  
 141 SKPMGTQTHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HLREFVFKNK DGFLYVYKGY  
 QPIDVVVRDLP 210  
 211 SGFNTLKPIF KLPLGINITN FRAILTAFSP AQDIWGTSAAYFVGDLKPT TFMLKYDENG  
 TITDAVDCSQ 280  
 281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPS GDVVRFPNIT NLCPFGEVFN ATKFPSVYAW  
 ERKKISNCVA 350 351 DYSVLYNSTV FSTFKCYGVS ATKLNDLCFS NVYADSFVVK GDDVRQIAPG  
 QTGVIADYN Y KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNINYKY RYLRHGKLRP FERDISNVPF  
 SPDGKPCTPP ALNCYWPLND YGFYTTTGIG 490 491 YQPYRVVVLS FELLNAPATV CGPKLSTD  
 KNQCVNFNFN GLTGTGVLT PSSKRQPFQQ FGRDVSDFD 560 561 SVRDPKTSEI LDISPCSF  
 VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNNVFQ 630 631 TQAGCLIGAE  
 HVDTSYEC DI PIGAGICASY HTVSLLRSTS QKSIVAYTMS LGADSSIAYS NNTIAIPTNF 700 701  
 SISITTEVMP VSMAKTSVDC NMYICGDSTE CANLLLQYGS FCTQLNRALS GIAAEQDRNT REVFAQVKQM  
 770 771 YKPTPLKYFG GFNFSQLPD PLKPTKRSFI EDLLFNKVTL ADAGFMKQYG ECLGDINARD

LICAQKFNGL 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG  
 IGVTNQVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVQLSS  
 NFGAISSV рн DILSRLDKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK  
 MSECVLGQSK RVDFCGKGYH LMSFPQAAPH GVVFHVTVY 1050 1051 PSQERNFTTA PAICHEGKAY  
 FPREGVVFVN GTSWFITQRN FFSPQIITTD NTFVSGNCDV VIGIINNTVY 1120  
 1121 DPLQPELDSF KEELDKYFKN HTSPDVLD GD ISGINASV рн VAKNLNESLI  
 DLQELGKYEQ 1190 1191 YIKWPWVWL GFIAGLIAIV MVTILLCCMT SCCSCLKGAC SCGSCKFDE  
 DDSEPVLKGV KLHYT 1255

SEQ ID NO. 3 - The nucleotide sequence of S<sub>A</sub>10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

3087 taccaccta tgtccttccc acaaggcagcc cccatggtg ttgtcttc acatgtcacg  
 tatgcgccat 3157 3158 cccaggagag gaacttcacc acagcggccag caattttgtca tgaaggcaa  
 gcatacttcc ctcgtgaagg 3227 3228 tgttttgtg ttaatggca cttcttggtt tattacacag  
 aggaacttct tttctccaca aataattact 3297 3298 acagacaata catttgtctc aggaaattgt  
 gatgtcgta ttggcatcat taacaacaca gtttatgatc 3367 3368 ctctgcaacc tgagcttgc  
 tcattcaaag aagagctgga caagtacttc aaaaatcata catcaccaga 3437 3438 tgttgatctt  
 ggcgacattt caggcattaa cgcttctgtc gtcaacattc aaaaagaaat tgaccgcctc 3507 3508  
 aatgaggtcg ctaaaaattt aaatgaatca ctcattgacc ttcaagaatt gggaaaatat gagcaatata  
 3577  
 3578 tta  
 3581

SEQ ID NO. 4 - The amino acid sequence of S<sub>A</sub>10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1029 YHLMSFPQAA PHGVVFLHVT YAPSQERNFT TAPAINCHEGK AYFPREGVVF FNGETSWFITQ  
 RNFFSPQIIT 1099 1100 TDNTFVSGNC DVVIGIINNT VYDPLQPEL SFKEELDKYF KNHTSPDVLD  
 GDISGINASV VNIQKEIDRL 1169 1170 NEVAKNLNES LIDLQELGKY EQYI  
 1192

SEQ ID NO. 5 - The amino acid sequence of the neutralizing fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1055 RNFT TAPAINCHEGK AYFPREGVVF FNGETSWFITQ RNFFSPQIIT TDNTFVSGNC DVVIGIINNT  
 VYDPLQ 1620 1621 PELDSFKEELDKYF KNHTSPDVLD GDISGINASV VNIQKEIDRL NEVAKNLNES  
 LIDLQELGKY EQYI 1192

SEQ ID NO. 6 - The amino acid sequence of S<sub>A</sub>11 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1 MFIFLLFLTL TSGSDLDRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL  
 PFYSNVTGFH 70  
 71 TINHTFGNPV IPFKDGIYFA ATEKSNNVRG WVFGSTMNNK SQSVIIINNS TNVVIRACNF  
 ELCDNPFFAV 140  
 141 SKPMGTQTHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HLREFVFKNK DGFLYVYKGY  
 QPIDVVVRDLP 210

211 SGFNTLKPIF KPLGLINITN FRAILTAFSP AQDIWGTSAA AYFVGDLKPT TFMLKYDENG  
TITDAVDCSQ 280  
281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPS GDVVRFPNIT NLCPFGEVFN ATKFPSVYAW  
ERKKISNCVA 350 351 DYSVLYNSTV FSTFKCYGVS ATKLNDLCFS NVYADSFVVK GDDVRQIAPG  
QTGVIADYNY KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNYNKY RYLRHGKLRP FERDISNVPF  
SPDGKPCTPP ALNCYWPLND YGFYTTTGIG 490 491 YQPYRVVVLS FELLNAPATV CGPKLSTDLI  
KNQCVNFNFN GLTGTGVLT P SSKRFQPFQQ FGRDVSDFTD 560 561 SVRDPKTSEI LDISPCSFGG  
VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNNVFQ 630 631 TQAGCLIGAE  
HVDTSYECDI PIGAGICASY HTVSLLRSTS QKSIVAYTMS LGADSSIAYS NNTIAIPTNF 700 701  
SISITTEVMP VSMAKTSVDC NMYICGDSTE CANLLLQYGS FCTQLNRALS GIAAEQDRNT REVFAQVKQM  
770 771 YKTPTLKYFG GFNFSQILPD PLKPTKRSFI EDLLFNKVTI ADAGFMKQYG ECLGDNARD  
LICAQKFNGL 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG  
IGVTQNVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVKQLSS  
NFGAISSVNL DILSRLDKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK  
MSECVLGQSK RVDFCGKGYH LMSFPQAAPH GVVFLHVTYA 1050 1051 PSQERNFTTA PAICHEGKAY  
FPREGVFVFN GT SWFITQRN FFSPQIITTD NTFVSGNCDV VIGIINNTVY 1120  
1121 DPLQPELDSF KE

1132